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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/718,059	11/21/2000	Carol L. Thompson	10001152	9197

7590 07/28/2003

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

SHRADER, LAWRENCE J

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 07/28/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/718,059

Applicant(s)

THOMPSON ET AL.

Examiner

Lawrence Shrader

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11/21/2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Dependant claim 16 is identified as "The method of claim 15, wherein..." . However, claim 15 claim is a computer program. The Examiner assumes that claim 16 should read: "The computer program of claim 15, further comprising:".

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houldsworth, U.S. Patent 6,526,421 in view of Merchant et al., U.S. Patent 6,163,838 (hereinafter referred to as Merchant).

#### **In regard to claim 1:**

*"First logic...receiving a first set of instructions and generating an initial instruction schedule...including one or more instructions associated with a correctness check function;"*

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Official Notice is taken that in processing code for execution, receiving a set of instructions and building an instruction schedule is well known in the art. Houldsworth discloses an instruction scheduler (Abstract; e.g., Figure 4) including a garbage collection function. The claims do not express any specific reason why other functions, e.g., the garbage collection function, could not be treated in the same manner as the correctness check because the same procedure would be used.

*“Second logic...evaluating the initial instruction schedule to determine...spare instruction slots into which said one or more instructions associated with the correctness function can be inserted;”* Houldsworth checks the instruction schedule for spare instruction slots where the function instructions could be inserted (column 6, lines 37 – 42).

*“Third logic...determining a number of additional instruction slots that may be added to the initial instruction schedule without exceeding the run-time performance cost tolerance level”* Houldsworth teaches that a performance cost is a factor in the slot allocation process (column 6, lines 43 – 46), but does not teach allocation of additional slots. However, Merchant teaches a condition when creation of an instruction slot necessary. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the slot allocation system of Houldsworth, having the ability to calculate performance cost, with the capability to add additional slots as taught by Merchant because this would allow the Houldsworth invention to add an additional slot if the performance is not too costly rather than not running the function at all.

**In regard to claim 2, incorporating the rejection of claim 1:**

*“Fourth logic...inserting one or more instructions associated with the correctness check function into the spare instruction slots if enough spare instruction slots exist...”* Houldsworth monitors the number of unoccupied instruction slots in order to determine sufficient space for the function (column 6, lines 28 – 32).

**In regard to claim 3**, incorporating the rejection of claim 2:

*“...if enough spare instruction slots do not exist...fourth logic determines whether the number of additional instruction slots is large enough to accommodate said one or more instructions...”* The Houldsworth invention allocates function instructions to a currently used slot if it is large enough (see Figures 3 and 5).

**In regard to claim 4**, incorporating the rejection of claim 1:

*“...the initial instruction schedule does not include any instructions associated with the correctness check function.”* The function (garbage collection) in Houldsworth runs in a process independently of the initial instructions (column 1, lines 54 – 55; e.g., Figure 2).

**In regard to claim 5**, incorporating the rejection of claim 1:

*“...compiler program including a first code segment for performing initial code generation...a second code segment for evaluating the initial instruction schedule to determine whether a spare instruction slot exists...a third code segment for determining a number of additional instruction slots that may be added to the initial instruction schedule...”* The Houldsworth invention may be implemented as a compiler (column 3, lines 33 – 39).

**In regard to claim 6**, incorporating the rejection of claim 2:

*“...compiler program including a first code segment that causes the processor to perform initial code generation...a second code segment that causes the processor to evaluate the initial*

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*instruction schedule to determine whether a spare instruction slot exists...a third code segment that causes the processor to determine the number of additional instruction slots that may be added to the initial instruction schedule...a fourth code segment that causes the processor to insert said one or more instructions into the spare instruction slots if enough spare instruction slots exist...*” The Houldsworth invention may be implemented as a compiler (column 3, lines 33 – 39).

**In regard to claim 7, incorporating the rejection of claim 6:**

*“...if enough spare instruction slots do not exist...the fourth code segment causes the processor to determine whether the number of additional instruction slots is large enough to accommodate said one or more instructions...”* The Houldsworth invention allocates function instructions to a currently used slot if it is large enough (see Figures 3 and 5).

**In regard to claims 8 - 12:**

Claims 8 – 12 (a method) are rejected for the same corresponding reasons put forth in the rejection of claims 1 – 5 (an apparatus) respectively.

**In regard to claims 13 and 14:**

Claims 13 and 14 (a computer program) are rejected for the same corresponding reasons put forth in the rejection of claims 1 and 2 (an apparatus) respectively.

**In regard to claim 15:**

Claim 15 (a computer program) is rejected for the same corresponding reasons put forth in the rejection of claim 7 (an apparatus).

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**In regard to claims 16:**

Claim 16 (a computer program) is rejected for the same corresponding reasons put forth in the rejection of claim 4 (an apparatus).

***Conclusion***

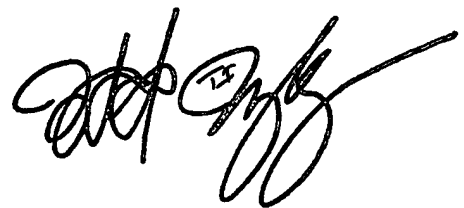
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Shrader whose telephone number is (703) 305-8046. The examiner can normally be reached on M-F 08:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703) 305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Lawrence Shrader  
Examiner  
Art Unit 2124

July 18, 2003

A handwritten signature in black ink, appearing to read 'Todd Ingberg', with a stylized flourish extending from the end.

**Todd Ingberg  
Primary Examiner  
Group 2100**